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The method is performed by both working with 20% or less redn. of area, and heating to 400 deg.C or higher, more than twice, using Fe-base alloy contg. 20-40 wt.% Mn, and 3.5-8 wt.% Si, and opt. 10 wt.% or less Cr, Ni, and Co, 2 wt.% or less Mo, 1 wt.% or less C, Al, and Cu, furthermore 0.01 wt.% or less Ca or rare earth elements.

ADVANTAGE - Shape memory performance of Fe-Mn-Si system shape memory alloy having high strength, toughness and if needed heat resistance and corrosion resistance, can be improved.

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PATENT ABSTRACTS OF JAPAN(11)Publication number : **62-112720**(43)Date of publication of application : **23.05.1987**

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C22C 38/04(21)Application number : **60-249957**(71)Applicant : **NIPPON STEEL CORP**(22)Date of filing : **09.11.1985**(72)Inventor : **MURAKAMI MASAHIITO**
MATSUDA SHOICHI
OTSUKA HIROAKI**(54) IMPROVEMENT OF CHARACTERISTIC FE-MN-SI SHAPE MEMORY ALLOY**

(57)Abstract:

PURPOSE: To improve the shape memory function of a shape memory alloy by subjecting a ferrous alloy contg. a specific ratio each of Mn and Si to working and heating under specific conditions.

CONSTITUTION: The ferrous alloy contg., by wt%, 20W40% Mn and 3.5W8% Si is subjected to ≥ 1 times of $\leq 20\%$ working and $\geq 400^\circ\text{C}$ heating. if necessary, 1 or ≥ 2 kinds among $\leq 10\%$ Cr, Ni and Co, $\leq 2\%$ Mo, and $\leq 1\%$ C, Al, and C may be incorporated therein. Further $\leq 0.01\%$ Ca or rare earth element may be incorporated therein and S and P are respectively preferably incorporated at about $\leq 0.003\%$ therein. The Fe-Mn-Si shape memory alloy which exhibits the excellent shape memory characteristic even while strain is held exerted thereto is thus obt'd.

LEGAL STATUS

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